

DEPARTMENT of ENVIRONMENTAL SERVICES
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: ZEALAND POND	Lake Area (ha):	1.21
Town: BETHLEHEM	Maximum depth (m):	1.2
County: Grafton	Mean depth (m):	0.4
River Basin: Merrimack	Volume (m ³):	4900
Latitude: 44°11'45" N	Relative depth:	1.0
Longitude: 72°29'30" W	Shore configuration:	1.03
Elevation (ft): 2480	Areal water load (m/yr):	11.15
Shore length (m): 400	Flushing rate (yr ⁻¹):	27.90
Watershed area (ha): 13.3	P retention coeff.:	0.54
% watershed ponded: 0.0	Lake type:	natural w/dam

BIOLOGICAL:

27 July 1993

DOM. PHYTOPLANKTON (% TOTAL)	#1	DINOBRYON 25%
	#2	STAURASTRUM 25%
	#3	(ALL WERE SPARSE)
PHYTOPLANKTON ABUNDANCE (cells/mL)		80
CHLOROPHYLL-A (µg/L)		1.09
DOM. ZOOPLANKTON (% TOTAL)	#1	KERATELLA 48%
	#2	CALANOID COPEPOD 39%
	#3	
ROTIFERS/LITER		51
MICROCRUSTACEA/LITER		56
ZOOPLANKTON ABUNDANCE (#/L)		107
VASCULAR PLANT ABUNDANCE		Common
SECCHI DISK TRANSPARENCY (m)		1.2 Visible on bottom
BOTTOM DISSOLVED OXYGEN (mg/L)		7.3
BACTERIA (E. coli, #/100 ml)	#1	4
	#2	
	#3	

SUMMER THERMAL STRATIFICATION:

not stratified

Depth of thermocline (m): None
Hypolimnion volume (m³) : None
Anoxic volume (m³) : None

CHEMICAL:

Lake: ZEALAND POND

Town: BETHLEHEM

		27 July 1993		
DEPTH (m)		0.5		
pH (units)		6.6		
A.N.C. (Alkalinity)		3.7		
NITRATE NITROGEN		< 0.02		
TOTAL KJELDAHL NITROGEN		0.17		
TOTAL PHOSPHORUS		0.012		
CONDUCTIVITY (μ mhos/cm)		20.6		
APPARENT COLOR (cpu)		28		
MAGNESIUM		0.23		
CALCIUM		2.0		
SODIUM		1.5		
POTASSIUM		< 0.40		
CHLORIDE		< 3		
SULFATE		1		
TN : TP		14		
CALCITE SATURATION INDEX		3.8		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1993

D.O. S.D. PLANT CHL TOTAL CLASS

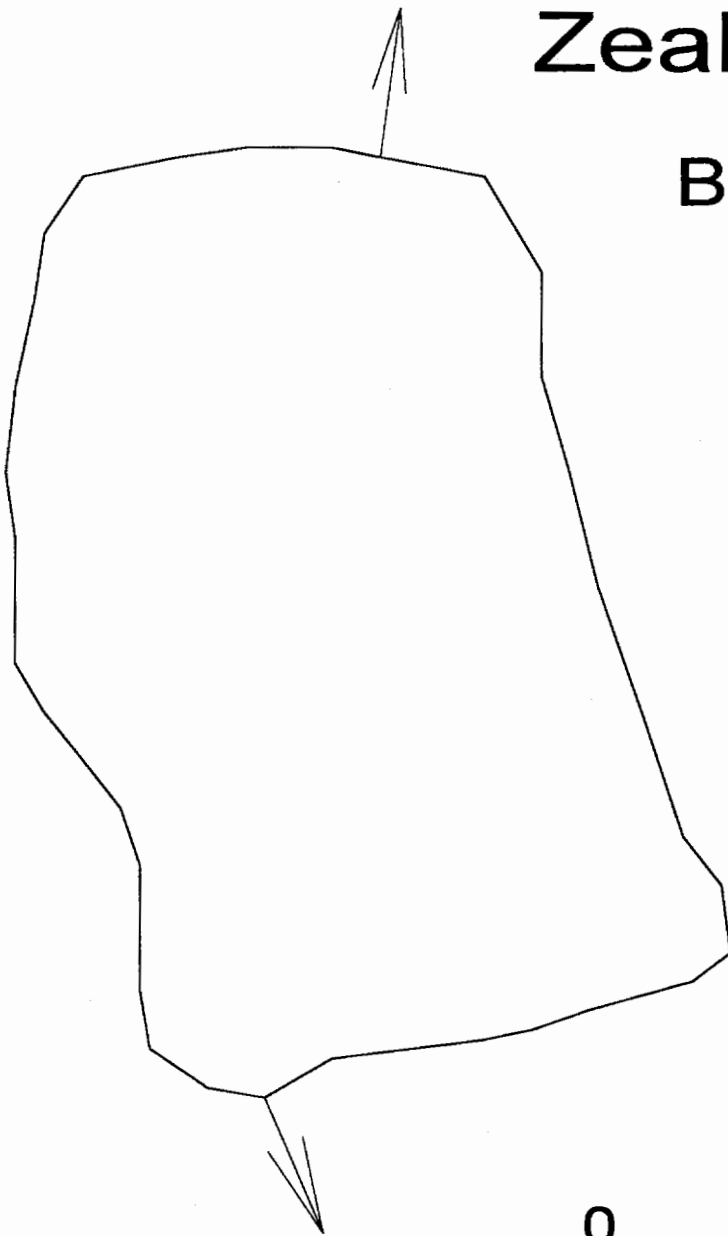
**	3	3	0	6	Meso.
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COMMENTS:

1. This is a small remote pond located in the White Mountain National Forest. It has a very small watershed and is located near the divide between the Merrimack and Connecticut River basins. Zealand Pond outlet flows south through Zealand Notch, eventually to the East Branch Pemigewasset River. Wetlands just north of Zealand Pond form the headwater of the Zealand River which flows north to the Ammonoosuc River.
2. No winter samples were collected because the ice went to the bottom -- no water was found.
3. Merismopedia (25%) and Mallomonas (20%) were the dominant genera of wholewater phytoplankton.

Zealand Pond

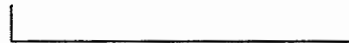
Bethlehem



all less than 4 feet

0

0.05



Km

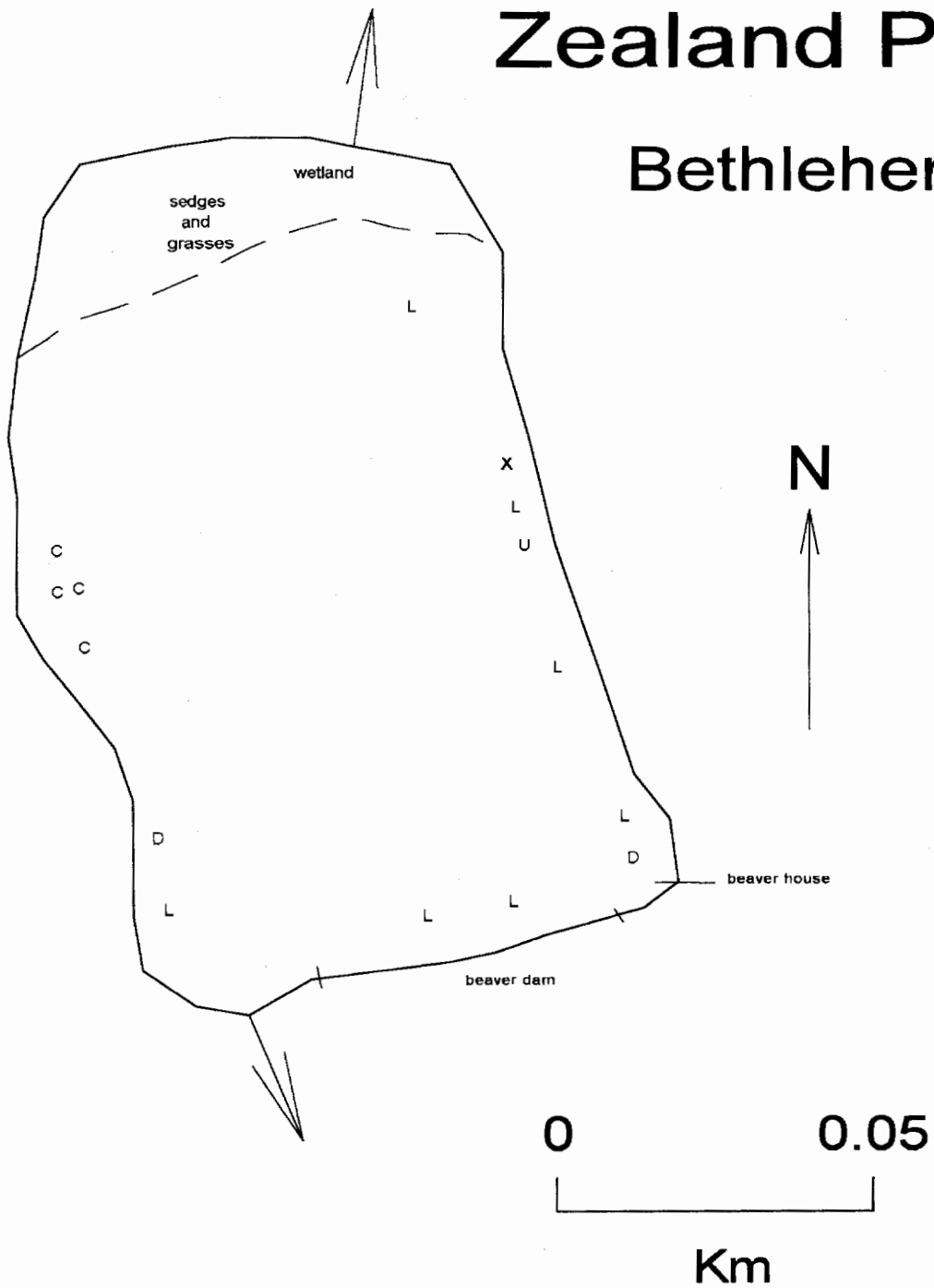
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Zealand Pond

Bethlehem



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